



*2003 Standard Course of Study and Common Core State Standards for Advanced Functions and Modeling and Pre-calculus*

North Carolina Assessment Specifications  
Summary

Measures of Student Learning: North Carolina's  
Common Exams for Advanced Functions and Modeling and  
Pre-calculus

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Purpose of the Assessments

- Measures of Student Learning: North Carolina's Common Exams for Advanced Functions and Modeling and Pre-calculus will measure students' academic progress in the 2003 *Standard Course of Study (SCS)*.
- Common Exam scores (along with any other relevant end-of-course or end-of-grade assessment scores) will be used in the Educational Value Added Assessment System (EVAAS) to produce student growth measures to satisfy Standards 6 and 8 of the North Carolina Educator Evaluation System.
- Common Exams were developed to replace locally developed assessments, providing teachers and principals with a common measure for all students state-wide during a given testing window. Educators are encouraged to use Common Exam scores in determining the student's final grade for each course. LEAs are encouraged to adopt policies regarding the use of Common Exam results in assigning final grades.
- Common Exams will NOT be used for school and district accountability under the READY Accountability Model or for Federal reporting purposes.
- For more information on the North Carolina Educator Evaluation System go to <http://www.ncpublicschools.org/educatoreffect/>.

Curriculum Cycle

- June 2003: North Carolina State Board of Education adoption of the *SCS*.
- 2011–2012: Item development for the Common Exams in Advanced Functions and Modeling and Pre-calculus.
- 2012–2013: First year of operational administration of Common Exams in Advanced Functions and Modeling and Pre-calculus.

Standards

- The *2003 Standard Course of Study in Advanced Functions and Modeling and Pre-calculus* are posted at:  
<http://www.ncpublicschools.org/curriculum/mathematics/scos/2003/9-12/index>.

Prioritization of Standards

- The North Carolina Department of Public Instruction (NCDPI) invited teachers to collaborate and develop recommendations for a prioritization of the standards indicating

the relative importance of each standard, the anticipated instructional time, and the appropriateness of the standard for multiple-choice (MC) and constructed response (CR) item formats. Subsequently, curriculum and test development staff from the NCDPI met to review the results from the teacher panels and to develop weight distributions across the domains for each grade level.

- Tables 1 and 2 describe the percentage of test questions that will appear on the Common Exams forms in Advanced Functions and Modeling and Pre-calculus. The majority of the items will be multiple-choice (78% to 86%), while a minority will be constructed response (14% to 22%). Students will probably take 20% to 25% of the available testing time to answer the CR items. As such, CR items will be worth up to three points each.

*Table 1. Test Specification Weights for the Common Exams in Advanced Functions and Modeling*

2003 Standard Course of Study	MC	CR
<i>Data Analysis and Probability</i>		
1.01, 1.02	9%_to_15%	10%_to_14%
1.03	18%_to_26%	0%
<i>Algebra</i>		
2.01, 2.04, 2.05	32% to 47%	0%
2.02, 2.03	4%_to_8%	4%_to_8%
Total percent of items	78-86%	14-22%
Total percent of score points	56-66%	34-44%

*Table 2. Test Specification Weights for the Common Exams in Pre-calculus*

2003 Standard Course of Study	MC	CR
<i>Numbers and Operations</i>		
1.01, 1.03	0%	3%_to_6%
1.02	6%_to_9%	0%_to_3%
<i>Geometry and Measurement</i>		
2.01, 2.05	12% to 16%	3% to 6%
2.02, 2.04, 2.07, 2.08	54% to 58%	0%

2.03, 2.06	0%	6%_to_9%
Total percent of items	78-86%	14-22%
<i>Total percent of score points</i>	<i>56-66%</i>	<i>34-44%</i>

#### Cognitive Rigor

- The Advanced Functions and Modeling and Pre-calculus items were aligned to the content standards using Marzano's *Thinking Skill Levels*. To read more about North Carolina's *Thinking Skill Levels* and how they were used to align items to the 2003 SCS read [http://www.ncpublicschools.org/docs/accountability/testing/eog/asb\\_thkskl.pdf](http://www.ncpublicschools.org/docs/accountability/testing/eog/asb_thkskl.pdf).
- Types of Items
- The Common Exams for Advanced Functions and Modeling and Pre-calculus will consist of four-response-option multiple-choice items and short constructed response items.
- The MC and CR items will align to the 2003 *SCS* content as shown in Tables 1 and 2.
- The CR items will require students to arrive at the correct numeric answer and show their work. Responses to CR questions will receive 0, 1, 2, or 3 points.
- Students will be allowed to use calculators for all items.

#### Testing Structure and Time

- The Common Exams will contain between 35 and 40 items. The test will be presented in two forty-five minute parts. Students will be given forty minutes to complete each part. Part one will contain MC items. Part two will contain some MC items and the CR items. Students should monitor the clock to ensure they allow themselves adequate time to respond to the questions.

#### Delivery Mode

- The Common Exams in Advanced Functions and Modeling and Pre-calculus are designed for paper/pencil mode; however, some districts may choose to convert the paper/pencil test for online administration through their own online administration systems. It is a local decision to determine if the Common Exams will be administered in paper/pencil or online.